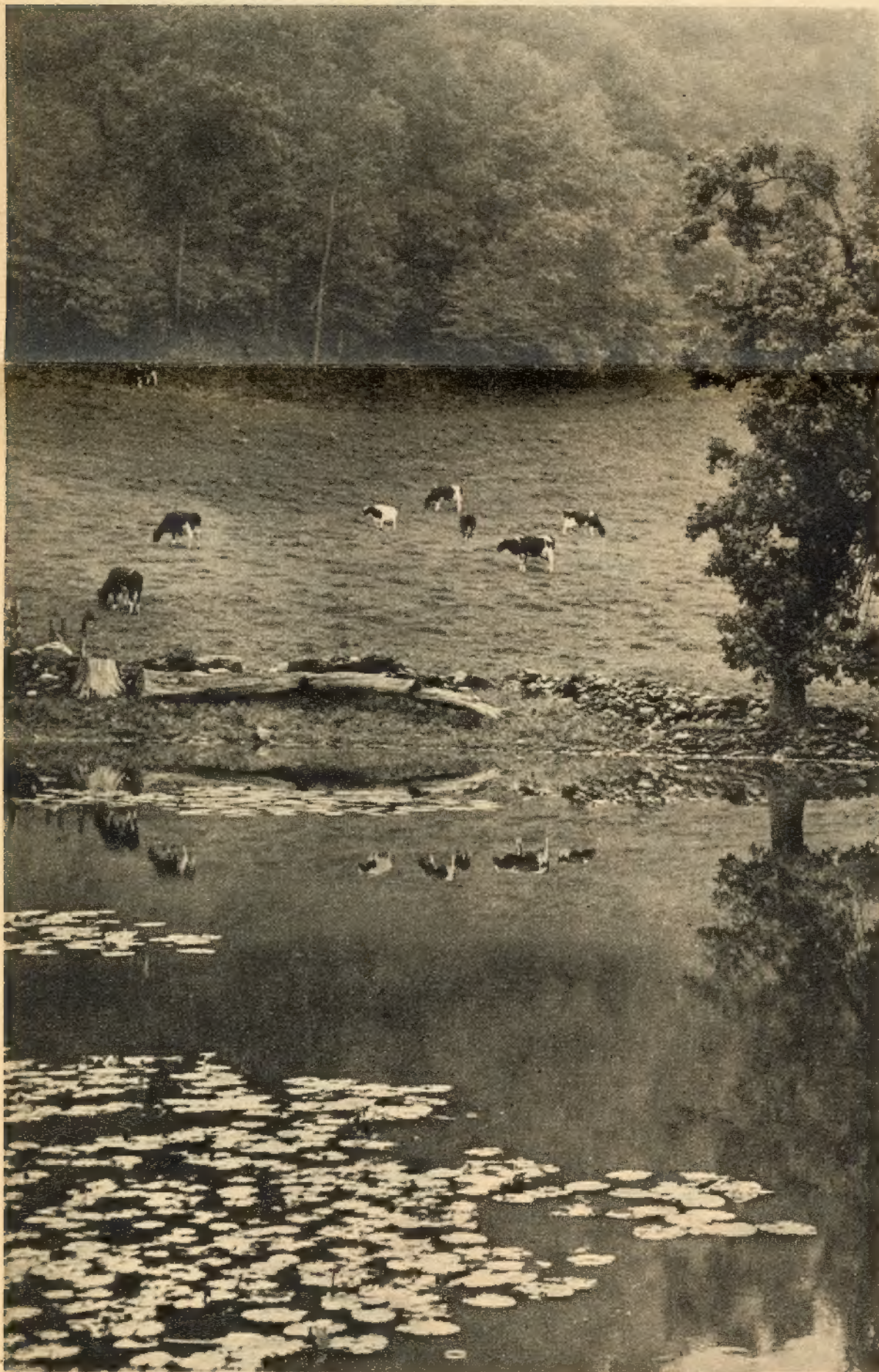


THE GARDEN STATE

CREAMY CROP

New Jersey's \$65,000,000 Dairy Industry, Second Only to California in Production per Cow, Is World Famous on Two of Many Counts—the Largest Registry of Guernsey Cattle and Development of the Holstein Herd



Proof that scenic beauty and dairying go hand-in-hand is found in browsing cows and sloping hill on this typical Sussex County farm.



WHEREVER natural landscape beauty abounds in New Jersey, there, too, the dairy industry thrives. Tick off the fine scenic areas—the rolling mountains and broad valleys of Sussex and Warren, the handsome hills of Hunterdon, Somerset and Morris; the lush level pasturelands of Monmouth, Burlington and Salem. Here is bucolic picturesqueness; here, too, the dairy farmer lives and works.

Scenery puts no dollars in the farmer's pocket, of course. Yet the very nature of New Jersey's \$65,000,000 dairy industry makes scenery an automatic counterpart. Milk cows need spreading green pasturelands, preferably on a rolling hillside and preferably with a cool bubbling stream splitting the fertile fields. Dairying means big barns, eye-catch-



Still, to the average eye a cow's a cow, for all that be she purebred or be she just a plain old Bossy. She is a picture of perfection as she stands beneath a weeping willow tree beside a meadowland stream, a symbol of rural strength.

Much of this perfect picture is lost

By John T. Cunningham

ing tall silos, neat yards and out-buildings. It can add up only to pastoral correctness.

Moving slowly over the dairy landscape in New Jersey are some 160,000 milk cows, placidly going about their business of changing green grass into creamy white milk. New Jersey's cows perform this miracle of internal chemistry well, too—each year placing second only to California in production per cow nationally, enough to let the state's dairymen each year produce some 1,150,000,000 pounds (about 500,000,000 quarts) of milk annually.

SOME of those cows feeding off the New Jersey hills are among the most famed in all the world. The world's largest herd of registered Guernsey cattle grazes in Sussex County, the world's most famed Holstein herd was developed in Essex County. Within five miles of one another in Morris County are the nation's most prized Brown Swiss and Jersey herds. One esteemed New Jersey bull has 250,000 descendants spread around the world—and is one reason why, in 1954, Sussex County again had more cows than people.

on New Jersey's dairy farmers at the moment, sadly enough. Once again the milk men are in the low point in the periodic ups and downs which have plagued dairy farmers ever since dairying became big-time some 80 years ago. Consumers complain that milk prices are high—why a quart of milk these days retails at about the same price as a quart of ginger ale or club soda. As all big users of club soda will agree, that's high.

The price of New Jersey milk must be argued elsewhere (and most assuredly will be, for years to come). Sometimes, however, some of the state's dairymen must yearn for the days of their great-grandfathers. Many of today's producers have intimate ties with those days gone by; a surprising number of New Jersey dairy

This is the seventh in a series of articles on New Jersey's highly diversified agriculture, vigorous and growing despite the constant inroads of industrial and residential development. Next week: Animal Husbandry.



In stalls at milking time are part of state's 160,000 cows, which annually produce about 500,000,000 quarts. RIGHT: A picturesque dairy farm in Burlington, one of Jersey's top dairy counties.



farms have been in one family for four or more generations.

FOUR generations goes back far enough, since the milk industry really had no stature until after the Civil War. Until then the cow had been a family friend, more or less, giving as best she could for as long as she could. She grew fat in the summer, when pastures were green, but her ribs reappeared in the winter as she wandered free on a diet of twigs and shrubs.

Near the end of the 18th century the average New Jersey farm had three to 10 head of cattle, and even the average town resident had a cow or two tethered in the back yard. A few farmers sold butter or cheese to neighbors, with the best example in all the state being the Capners of Hunterdon County, whose cheese became a Colonial delicacy. In 1791, for example, Joseph Capner sold 3,000 pounds of cheese in markets as far away as Philadelphia.

In the hills of Sussex, Warren, Hunterdon and Morris sheep and beef cattle rather than dairy cattle grazed in the broad pasturelands until two things—the railroad and mushrooming populations—changed all immediately after the War Between the States. Railroads brought in great quantities of low-priced Western beef after the first refrigerated cars rolled in 1871. West Jersey's beefy cattle quickly disappeared.

Railroads also attracted industries, and industries brought in hordes of people to cities like Newark, Paterson, Jersey City and Trenton. Ill-kept, odorous cows had to leave the populated areas; citified folk couldn't stand the country air in their back yards. Even the "swill" cattle, feed-

ing on slops from Newark's breweries, had to take to the hills.

Agricultural journals urged the raising of dairy cattle. The "American Agriculturist" in 1867 speculated that of the 40,000,000 people then living in America, at least one-eighth must buy milk. The editor could scarcely contain himself as he figured the economic implications of that.

"One-eighth of 40,000,000, that's 5,000,000 milk buyers!" the editor exclaimed. "If each drinks a pint a day, that's 114,062,500 gallons a year! If milk could bring 12 cents per gallon, that would mean \$13,687,000 every year from milk!"

DAIRY cows began to spot the hills west of the Orange Mountains, began to spread over the tier of South Jersey counties fronting on the Delaware River. The railroads helped build the dairy industry (not through altruism; good profits awaited the hauler of milk). Railroad agents went up and down their lines, encouraging greater production. Receiving stations built along the tracks made it convenient for the farmer to ship his milk off to the big cities via the railroads.

The quarter century between 1875 and 1900 might well be the most important in all dairying history, and of all development of those 25 years none surpassed the cream separator. Perfected in Sweden, the cream separator assumed vast American importance when the De Laval Co. bought the patent.

The cream separator swept away old rule of thumb methods of cream separation, took the manufacture of butter off the farm and put it into factories. Farmers responded by establishing creameries, where De Laval separators took off the cream for the

manufacture of butter or ice cream. Skimmed milk went back to the farmer to feed his stock.

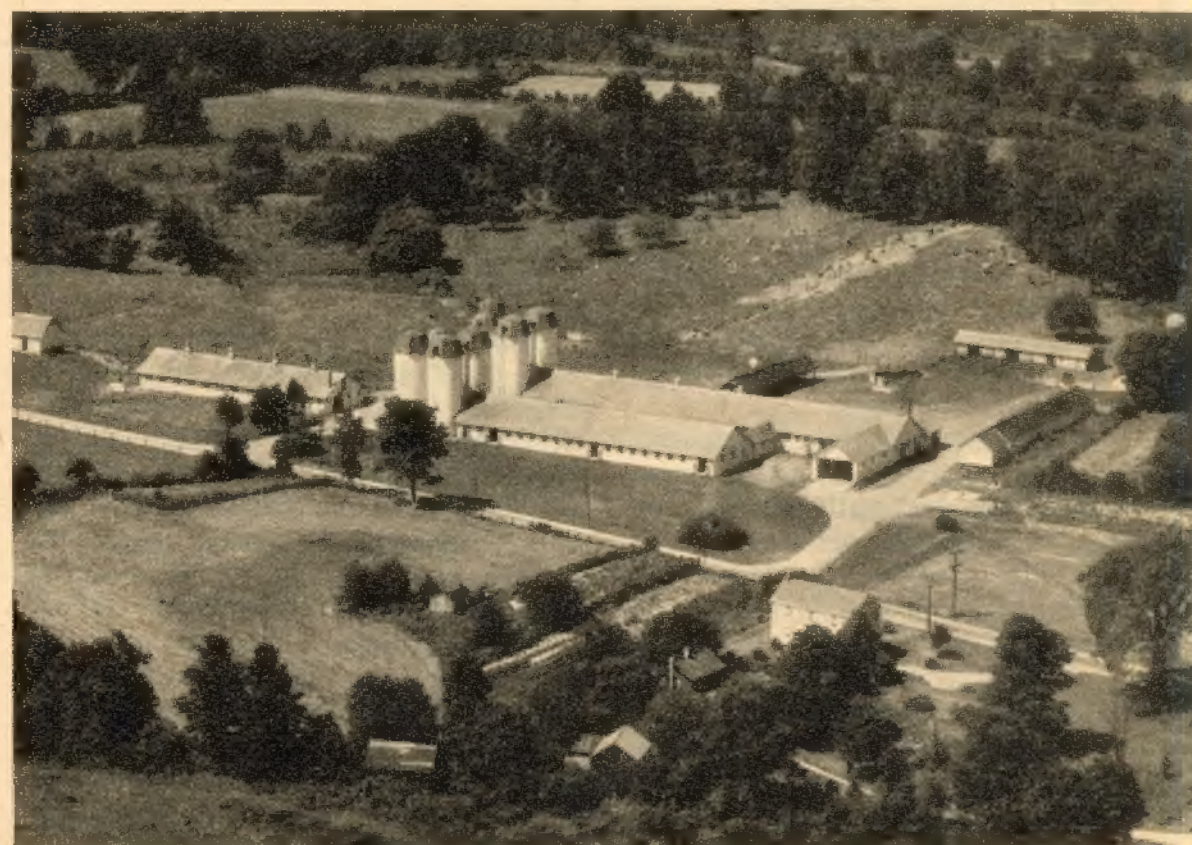
MANY farmers chose to send whole milk into the cities, of course. Once in the city the milk went out to the customers in quaint, if unsanitary, fashion. Two huge milk cans were put on a horse-drawn wagon and the driver rang a bell to summon housewives with their buckets. If the driver was particularly talkative, customers on the end of the line never tasted sweet milk.

Many a city customer never tasted whole milk, for that matter. Ugly rumors spread milk had been diluted with water for a long period of years.

Blame that on the city slickers, farmers declared (with the full knowledge that water was easy to come by in the country). Actually, the farmer had no economic reason to refrain from diluting his milk; his receipts reflected the quantity, not the quality of his milk.

Dr. S. M. Babcock of the Wisconsin Agricultural Experiment Station invented his effective yet simple butterfat test in 1890—and as more and more milk came to be purchased on a butterfat basis, water became something to wash bottles in rather than to fill them with. The cream line became increasingly vital, too, after invention of a suitable glass bottle in

(Continued on Following Page)



The dairy research farm at Beemerville, where Rutgers specialists developed a Holstein herd capable of producing high-butterfat milk.

JERSEY DAIRYING

(Continued From Preceding Page)

1886. Now, if her taste didn't tell the housewife when her dealer watered the milk, the cream line did.

Quality meant the days of the non-descript milk cow were numbered. Some progressive leaders had been preaching for years that specialized breeds should be used for milk, but most farmers stuck to such as Devons and Shorthorns, theorizing that if they didn't give much milk, they could at least be fattened into reasonably good beef. That, for a cautious man, had its merits.

SLOWLY the demand for better breeds of dairy cattle grew, backed by wealthy fanciers and by prosperous farmers who could afford to import top-flight cattle. Silas Betts of Camden, who imported the state's first purebred Guernsey bull and heifer in 1877, was one of 11 organizers of the American Guernsey Cattle Club that same year. Two years later, John Bishop of Columbus (Burlington County) and other Jersey fanciers organized the Jersey Cattle Breeders' Club; by 1884 the club had 21 members and herds totaling 500 cattle.

Most Jersey and Guernsey cattle breeding centered in Mercer, Burlington and Camden counties between 1870 and 1900, with the most notable exception being H. McKay Twombly's Florham Farms in Florham Park. There Joseph L. Hope, Twombly's superintendent, developed the May Rose herd, one of the nation's prime Guernsey families. Hope's bull, Ne Plus Ultra, was one of the all-time great Guernsey sires.

Meanwhile, Ephraim T. Gill of Haddonfield established the Glenwood family of Guernseys at Haddon Farms—said by many judges to be one of the five major families which have contributed the greatest influence in laying the foundation bloodlines in the breed. Later, other Guernsey leaders included Charles D. Cleveland, owner of the Sunny Brook herd at Eatontown; Dr. James E. Russell of Lawrenceville, developer of the Glenburnie Golden family, and Gordon Hall of Cranford, one of America's most respected Guernsey importers.

STILL, for all the golden richness of milk from the Jersey and the Guernsey, the black-and-white Holstein claimed the most respect from working dairy farmers. The reason: She gave more milk than any other breed—even if not as creamy.

James Neilson of New Brunswick owned 30 registered Holstein cows and nine registered bulls by 1881 and by 1884 his stock set six national 10-month milk records. By 1900 New Jersey had one of the largest memberships in the Holstein Breeders' Assn. of America and before World War I such personages as A. A. Cortelyou of Somerville, E. C. Brill of Warren County and Bernard Meyer of Finderne helped give New Jersey an enviable standing among breeders of registered Holsteins.

Some dairymen tended to sneer at

purebred cattle raising as a rich man's pastime (and, to look at it with open eyes, it wasn't exactly a sport for dirt farmers). Yet, breeding of better cattle made the New Jersey dairy industry important. Most of the breeders were generous, often lending their expensive bulls to improve neighbors' stock.

Milk production per cow leveled off at a high figure, although milk production in the state stayed almost constant from 1889 to 1924. Rutgers scientists turned their attention to dairying in earnest. They worked to improve farm breeds, they became the nation's acknowledged foremost authorities on forage crops. Experiments at the Rutgers Experimental Station between 1880 and 1890 proved the importance of corn ensilage, and Rutgers may legitimately claim to have hastened the full adoption of the all-important silo in the nation's dairy districts.

BUT as milk production and milk consumption held ever greater importance, thoughtful minds began to ponder the problem of diseases borne by unseen bacteria swimming in milk. Adulteration had been bad enough, but at least the water usually had been pure.

Dr. Wilfred F. Harrison, State Board of Agriculture veterinarian, in 1888 began a fight to eradicate contagious pleuro-pneumonia in cattle. Four years later, after a vigorous campaign of cattle slaughtering, disinfection of milk buildings and even barn burning where all else failed—pleuro-pneumonia disappeared from New Jersey forever.

At the same time Dr. Henry L. Coit, Newark baby specialist, campaigned relentlessly for pure milk, produced under auspices of a medical commission. The following year the Essex County Medical Society organized a commission and signed an agreement with Stephen Francisco of Caldwell to produce "certified" milk at the Fairfield Dairy Farms.

FAIRFIELD produced the world's first certified milk in 1893; within 10 years 28 other cities established milk commissions. "Certified milk" became common in cities (and, in an unconscious twist of the tongue, New Yorkers on the street paid tribute to a Newark doctor by calling their milk "coitified").

Started in New Jersey, certified milk rightfully achieved its greatest impetus in New Jersey when the Walker-Gordon Laboratories shifted from Boston to Plainsboro in Mercer County in 1897. Young Henry W. Jeffers, fresh out of Cornell, joined the firm in 1898 and built it into one of the world's best-known dairy farms.

Walker-Gordon had 35 cows in 1898; today, the Plainsboro enterprise covers 3,500 acres and includes more than 1,500 cows. Jeffers dramatized Walker-Gordon in 1930 with his invention of the Rotolactor, where 50 cows can be milked efficiently at one time as they ride a "merry-go-round." The Plainsboro Rotolactor is the only one



Attendant at Overbrook Dairy, Cedar Grove, milking "Essex Suzone Ida," 18½ years old, highest living lifetime producer in world with an average of 7,500 quarts per year. BELOW: Bottling dairy's output, which is consigned to Essex County's Overbrook Hospital.



in this country. Possibly no dairy concern on earth has done more than Walker-Gordon to stimulate production of milk modified for infants.

NEW JERSEY also led the way in the fight to force tuberculin testing of cows—and a fight it was, starting in 1893 and not becoming firmly established until 1937, when the state became accredited as free from bovine tuberculosis. No New Jersey agricultural problem has ever been as touchy, as fraught with misunderstandings and stubbornness as the war on bovine tuberculosis.

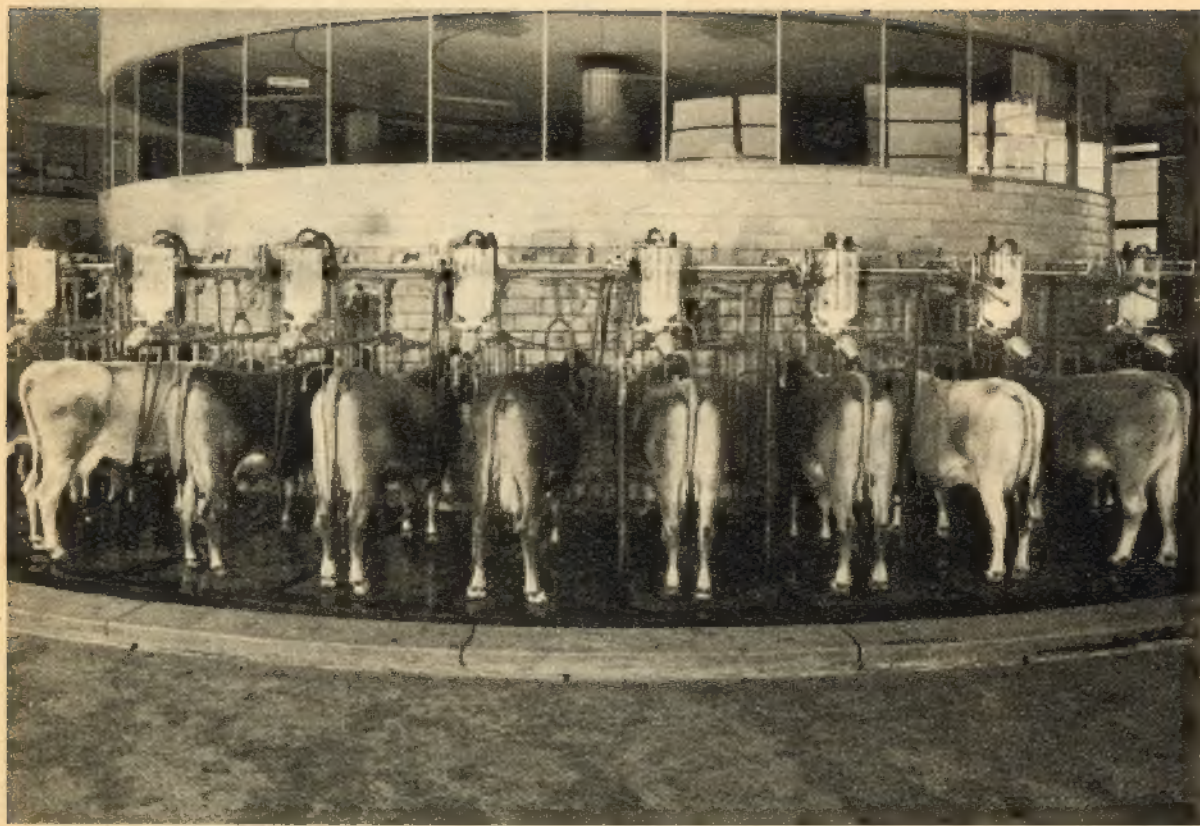
Give farmers credit—their representatives on the State Board of Agriculture first pushed for TB testing in the early 1890s. The matter became a political football, even after Dr. William H. Park of New York City proved in 1900 that bovine tuberculosis could be transmitted to humans. Many dairymen fought efforts to rid the state of the disease, and they were joined by anti-vivisectionists, some large milk distributors, poli-

ticians, and those ever-present foes of government interfering with anything or anyone at any time.

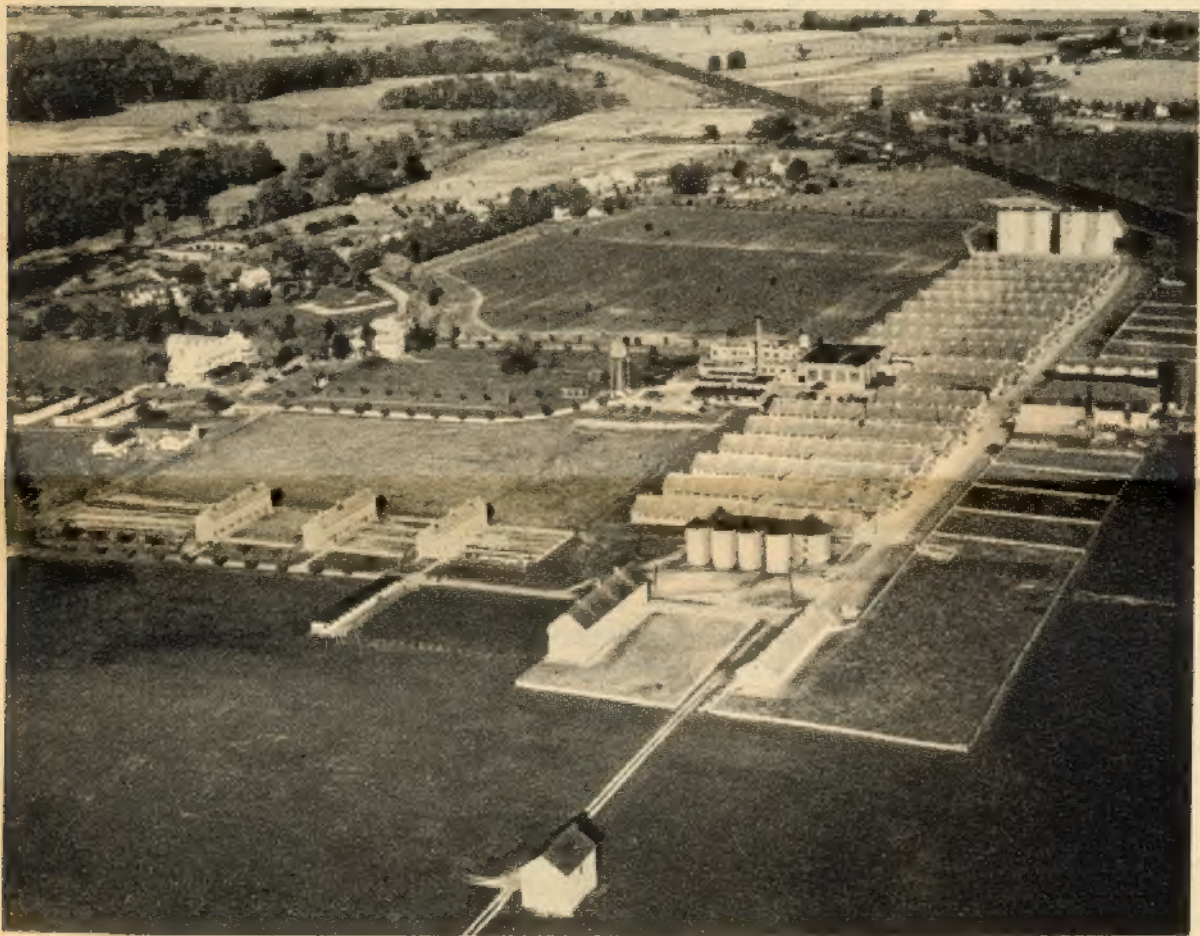
Again, be fair to the farmers. Tuberculosis-infected cows had to be slaughtered, and for a long time indemnities in no way paid farmers for their losses. Consider the cry that would be raised if machines were suddenly proclaimed dangerous by law and all machines were ordered scrapped at a price far under actual value. Consider that, and the farmer's cry seems not exorbitantly loud.

MONTCLAIR in 1909 passed the country's first ordinance requiring all milk sold in the municipality to be from tuberculin-tested cattle. A big milk distributor—not the dairy farmer—fought that through the courts for three years. Still, public consciousness—plus increased government indemnities—beat back opponents of TB testing in the 1920s and early 1930s.

Meanwhile dairy farmers went ahead with their work—improving



Cows on the Rotolactor, a "merry-go-round" affair for mass milking, at Walker-Gordon Farm, Plainsboro. Enterprise covers 3,500 acres (below) devoted to some 1,600 cows. Testing the final product (upper right) is part of painstaking care to keep milk top grade.



their herds, improving their barns, improving their feeding programs, adding milking machines to their equipment. Milk production soared, until by 1941 New Jersey moved into second place nationally in individual production per cow. That year, with some 22,000 fewer cows than in 1889, the state's 140,000 milk cows produced 101,000,000 gallons of milk—compared with 64,003,953 gallons in 1889.

The old traditions of the purebred herds grew stronger in the 1930s. Jacob Tanis had started to build in Sussex County the Ideal Farms herd which today numbers some 1,500 cattle, the world's largest purebred Guernsey herd. Warren Kinney's Brown Swiss cattle at Lee's Hill Farm in New Vernon and Peter H. B. Frelinghuysen's Jersey herd at Twin Oaks Farm in Morristown were tops in the nation (and still are, for that matter). W. P. Bliss developed a nationally acclaimed herd of Ayrshires at Wendover Farm in Bernardsville. Vigorous advertising campaigns

proclaimed the creamy virtues of Golden Guernsey milk throughout the 1930s, and built up demand for high butterfat milk. Nevertheless the Holstein continued to be the leading milk cow on New Jersey dairy farms. One name—Mark H. Keeney—must be recognized whenever Holsteins are mentioned.

Mark Keeney won his fame at Overbrook Dairy at the Essex County Hospital in Cedar Grove. A "book" dairyman when he came to Overbrook in 1923 (having been an extension specialist at Rutgers), Mr. Keeney within two years had built the foundations of one of the world's greatest Holstein herds and had won world honors before his death in 1949. His supreme moment came in 1944 when the Holstein-Friesian Assn. of America announced Mark Keeney's herd had established a 10-year world's record for butterfat and milk production in herds of more than 70 cows. In all, the Overbrook herd averaged 15,802 pounds of milk per cow and 532.4 pounds of butterfat per cow.



Simultaneously, Dr. John W. Bartlett and Rutgers animal husbandry specialists of the N.J. Agricultural Experiment Station at Beemerville set out in 1932 to develop a herd of Holsteins capable of producing 4 per cent butterfat. They started with cows testing 3.4 per cent butterfat, and 10 years later, the entire herd averaged 3.9 to 4.1 per cent butterfat and production per cow had been upped from 8,600 to 12,000 pounds of milk.

One of the Beemerville bulls, "Ormsby Sensation 45th" (or "Old 45th," to use the affectionate Beemerville name), won a spot for himself. Foundation sire for the herd, "Old 45th" produced so well that today more than 250,000 United States Holsteins trace their lineage back to "Ormsby Sensation 45th."

Another Beemerville bull, "Sir Mutual Ormsby Jewel Alice" (a fine name for a bull, that), went on loan to the first cooperative artificial breeding association in the United States—started in 1938 by Hunterdon County farmers guided by Prof. Enos J. Perry, dairy specialist at Rutgers. The artificial breeding program has been a tremendous factor in improving all New Jersey dairy herds, since now the finest breed lines are available to any dairyman at nominal cost. Nationally, more than 4,000,000 cows were bred artificially in 1954, compared with 1,000 in 1938 (all of the latter in New Jersey).

STATISTICS show that the New Jersey dairy industry continues strong—as far as output is concerned. The number of dairy cows on the state's farms has increased from 116,000 in 1925 to 158,000 in 1954, a gain of 40 per cent; volume of production has 1925 to 1,150,000,000 pounds in 1953, an increase of 63 per cent; average annual production per cow has increased in the same period from 6,080 to 7,420 pounds, or a gain of about 22 per cent.

Economically, the picture is not so rosy, at least from the viewpoint of the farmer, who complains he is caught in the midst of high feed costs, stiff competition and inequitable returns for his product. But his 1955 plight is still a far cry from 1932, when milk dropped to as low as \$1.32 a hundred pounds (about 3 cents a

quart). Those hard times led to the establishment in 1933 of the State Milk Control Board (now the Office of Milk Industry) to fix prices at a level to help insure a decent income to the farmer.

Let it be repeated that the problem of economics can't be solved in limited space, but experts say most New Jersey dairy producers are "marginal" producers—that is, he needs a certain fixed monthly income to pay his way. If prices are down, he produces more milk to meet that income, and his increased output can mean overproduction.

NEW JERSEY dairy farmers are beset by other forces. Supports for butter, for example, hurt a region like New Jersey where milk sales are largely for fluid consumption rather than for butter manufacture. Again, as individual butter consumption drops (per capita butter use has dropped from 18 pounds to seven pounds per year in recent years), Midwestern milk which once went into butter now threatens to roll eastward into local market areas. Advanced methods of handling milk make it easy for milk to come from 400 to 500 miles away to the markets which not too long ago were considered the special province of the New Jersey dairyman.

The "outside" milk can't be kept out—either practically or legally—since New Jersey farms produce only about 50 to 60 per cent of the requirements of the state's 5,000,000 residents. Prices may be raised some, but there is a very definite consumer resistance ceiling on that.

Thus the dairy farmer stands at a serious dollars-and-cents crossroad. His cattle are splendid producers, his methods of farming are superior, his local markets are excellent—but the first two virtues apply also to his distant competitors, who are well aware of the good Eastern markets and are willing to struggle to get as much milk business as possible.

The crossroad is not nearly as pretty as a real crossroad in the well-kept dairylands of Sussex, Hunterdon or Warren or a pastoral crossroad in Burlington or Salem.

It's a shame to mar bucolic perfection with facts, but behind the red barns and the placid cattle there is turbulence by the dollar sign.